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I have used the computer program *RedShift Multimedia Astronomy, Version 2* (produced by Maris Multimedia, San Rafael, CA) to look at the stars above Easter Island over a period of years. The pictures were excellent. With this program, I have determined that a solar eclipse occurred on December 31, 1842, near summer solstice, and found reports about this event in the Great Washington tablet (Sb7 - Sb8), in a hieroglyphic record of Atan's manuscript and in a hieroglyphic record of Tomenika's sheet (Rjabchikov 1996a:33, 36). *RedShift* allowed me to observe the celestial bodies on that day, and I realized why a local, Tomenika, described that eclipse. The partial eclipse lasted about 3.5 hours and would have been a horrible warning from the gods. The duration of that eclipse was unusually long¹ and it occurred 20 years before the Peruvian slave raid in December 1862. The 20 year interval may be understood as an encoded symbol, because "twenty" is a sign of birds (the sun) in Rapanui manuscript E (Barthel 1978:149). I have also studied the sky from AD 1831 to 1842 and connected the *rongorongo* text of the Great Washington tablet with astronomical observations. The report about a solar eclipse is presented in the line Sa 1, and such eclipses occurred on August 7, 1831, on February 1, 1832 and on January 20, 1833. In the line Sa 2 there is a report about Venus and the new Moon situated together in the month *Hora-nui* (September/October). The inscription, in particular, reads— according to the author's nomenclature (Rjabchikov 1987: 362-3):— ... 44-17 3 24 6-6 6-4-6-4 25 4-6 6-15*Tua-tea, Hina - ai Haha. Hotohotu hua - tuha Hora...*, i.e. "...Venus and the Moon the place *Haha* (the place of the dead). The fruits are ripe" - the month *Hora...*," where the term *Haha* is a marker of death and darkness (Rjabchikov 1996b:16; 1997a:6; 1998a). In the line Sa 4 the text again contains the name of the month *Hora-nui* (6-4 6-15-6-15 6-4 19 49 *Hotu Horahora, hotu ki (ariki) mau* "The harvest of the month *Hora*, the harvest for the king". Then the tablet tells of the rising of Mars, the Moon and Venus and about the bright star *Pau* (Halley's comet) of 1835. For instance, that date could be October 19, 1835, when this comet was slightly brighter than the star Aldebaran (Belyaev and Churyumov 1985:76). Hence one can suppose that the conjunction of Venus and the new moon happened at the first night of the month *Hora-nui*, or on September 22, 1835. The computer shows the corresponding picture.

Interestingly, the tablet includes the name of the last king *Maurata*. He was kidnapped by the Peruvians and died in captivity (Métraux 1940: 91). The text (Sa 2/Sa 3) reports: ... 65 [a damaged glyph] 4 65-15 4 65-15 [a damaged glyph] 24 6-24 68 6-6 4-49-5-15 4-49-5-15 56 [then a severely damaged fragment] ... *Rangi [roa], ata, Rangi roa, ata, Rangi roa. Harihari Honui Haha ata Mau Atua Roa, ata Mau Atua Roa - po[ki (?)]* ... "The Great Sky, a shadow/an image, The Great Sky, a shadow an image, The Great Sky. The nobleman *Haha* is carrying the shadow/image of the great (prince) *Maurata*, the child (?)..." Several comments are necessary. This is the description of the birth of *Maurata*, as the record correlates with the corresponding religious formula included in the Manuscript E: "*Ka*

ea te ata o te ariki. Te huhu kai rangi. Te vevero kai rangi. Tu kaka kai rangi. Tu mani kai rangi. Ata uri toou e te ariki e. Ata mea toou e te ariki e. Ata tea toou e te ariki e" (Barthel 1978: 345; comments in 179-181). The name of the prince, *Maurata*, consists of the two parts: (*ariki*) *mau* "supreme chief" and *rata* (cf. Maori *rata* "red hot"², Rapanui, Mangarevan *rata* "to welcome", Maori *rata* "familiar, friendly", Mangarevan *akarata* "prophet; oracle; man possessed with a demon"). His name signifies "The king (a descendant of) the sun"³, and its variant, *Mau Atua Roa* "The king (a descendant) of the great god" is written down on the tablet. The prince's double name means the plurality, and here it denotes the word "great".

Indeed the report about the mysterious star *Pau* is a key to the Washington tablet. Métraux (1940:53) informs us about the star: "... *Pau*, a star which appears in October or November. The appearance of these three stars in October foretold death and evil... *Pau* was sometimes bad and sometimes good." I think that *Pau* (lit. sign, mark) is not Sirius (*Pou*), because the latter, for instance, was visible during November, October, September, August and July. On the other hand, Halley's Comet was visible in October, 1835, in September 1682 in October 1607 and in September 1531 (Belyaev and Churyumov 1985 and the *Red-Shift* program), so these dates are near the October/November time suggested by Métraux. Thus, the star *Pau* is in my opinion Halley's Comet (Rjabchikov 1994; 1997b:204; 1997c:36). Moreover, the name of *Pau* is present in an Easter Island place-name *Hero mapo pau* (Barthel 1962:105) that can be decoded as *Hero ma PO Pau* and signifies "*Pau* (with the generic determinative NIGHT) is shining brightly"; cf. Rapanui *herohero* "bright; crimson, red", Maori *ma* "white, pale, clean", *wakama* "to make white".

I have been collecting data about the *paina* feast of the ancient Easter Islanders. First of all, Father Eyraud spoke of the *paina* as a summer festival (Brown 1996:116). J. M. Brown's observations were summed up as follows: "The *paina*, coming in spring and summer when food was plentiful has a strong resemblance to one of those festivals in Tahiti and the Marquesas, which the *Areoi* came out of their retreat to celebrate, either the coming of the sun or his departure. ... The *paina* ... must have been based on a seasonal ceremony in connection with food. And its wickerwork figure had its analogy in Tahiti. On Cook's first voyage they saw in Tiarapu "one of their *eatuas*, or gods; it was made of wickerwork and resembled the figure of a man; it was nearly seven feet high. It was probably used in one of those seasonal festivals" (Brown 1996: 244).

A Rapanui legend (Felbermayer 1948: 83-7) informs us that, having cleaned up of the fields, the natives celebrated the *paienga* feast. Fedorova (1978:358) believes that it is a form of the name *paina*. Other examples are the following: In Tahiti a first-fruit festival is celebrated called the *parara'a matahiti*, beginning in December or early January and invoking *Roma-tane* (*Ro'o-ma-tane*), god of Paradise (Beckwith 1970: 36). Here *ma-tahiti* means "the face (sun) is rising". A tapa figure (Heyerdahl 1976: figs. 19, 20) also named *paina* represents a bird or bird-

man (Kaeppler 1987; Fedorova 1993:152), and the names of the sun god and moon goddess are inscribed on such figurines (Rjabchikov 1998b:55-6). Eventually, according to Brown (1996:244), the feasts were the chief form of the Polynesian religion, and small wonder that the sun deity (*Tane, Tiki, Tangaroa* or *Makemake*) had a dominant role in such ceremonies. Besides, in the Melanesian beliefs the *mana* (super-natural power) is associated closely with the (sacral) heat and light (Petrushin and Polinskaya 1994:167).

It is common knowledge that the *paina* also celebrated the memory of a dead parent (Métraux 1940:343). I think that the term *ivi* (cf. Rapanui *ivi* "bone; parent; family; ancestry", Mangarevan *ivi* "parent; family-genealogy", Tahitian *ivi* "bone; corpse; place of ghosts") can clarify it. A dead parent transformed into a ghost could help his children and vice versa. So the agricultural cult and the cult of ancestors—the early forms of the religion—were connected on Rapa Nui.

Métraux (1940:343) says about *paina* that "it was always celebrated in the summer, and the right time for it was indicated by the position of the three central stars in Orion." According to RedShift 2, the full moon of December or the end of November is usually situated near these stars during the 17th-20th centuries. I suggest that the *paina* feast was aimed at praise and satisfaction of the sun deity *Makemake* before his position at the zenith. So the *Vaiarenga* feast (cf. Rapanui *vaai* "to give" and *renga* "yellow colour"/figuratively "the sun") celebrated in honor of *Makemake* and in connection with coming of the dry season (Felbermayer 1948:75-7) could be the *paina* feast indeed. Compare Rapanui *painga kia Makemake* "to give a portion to *Makemake*" (Felbermayer 1967), the place name *Te paira* (Barthel 1962:106) [*Te pai(nga) ra'a*] "a portion of the sun (the god *Makemake*)" and the Polynesian rite's name *pai atua* (Stingl 1986:287-8) as well. Moreover, having deciphered the glyphs on the *paina* figurines, I realized that *paina* = Maori *paina* "to warm oneself, to bask; to dry" (Rjabchikov 1998b:56).

NOTES

¹A partial solar eclipse can last as long as 3.5 hours (Mikhailov 1954:34; Dagaev 1978:80), although a typical solar eclipse lasts about 2.5 hours (Larichev 1993:20). I should like to thank Dr Fred Espenak, NASA/Goddard Space Flight Center, Greenbelt, Maryland, USA who informed me about data of the solar eclipse of May 10, 1994. For instance, this eclipse in Anniston, Alabama lasted about 3.5 hours, but for many other places - about 2 - 2.5 hours (for Santa Barbara, California - about 2.7 hours). For critique of previous variants of this letter, I am grateful to Dr Georgia Lee and Dr William Liller. Both gave me impetus to research the Rapanui folklore, script and astronomical models carefully.

²Having compared the Samoan, Maori and Rapanui folklore versions, I concluded that the name of the character *Lata* (*Rata*) meant "red hot" (Rjabchikov 1998b:56).

³Certainly, the expression *mau atua roa* could be not only the prince's name, but also a part of the religious formula "the king, (a descendant) of the great god."

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